EVER POWER SYSTEMS

PRODUCT CHARACTERISTICS

SINLINE PRO 10 000

The latest series of the state-of-the-art LINE-INTERACTIVE (VI) UPS units is designed to work with devices powered from a ~230V single-phase grid: servers, computer networks and data processing systems. SINLINE PRO 10000 UPS units are available in the Tower version only. Optional external battery packs can be connected. It is enough to report the requirement to the manufacturer.

FEATURES

- energy efficiency of 98%;

- the unique Clear Digital Sinus (CDS) System;

- the Automatic Voltage Regulation (AVR) System;

- Cool Battery Charging (CBC) System.

COMMUNICATION

- RS 232,USB communication interface
- SNMP/HTTP Network Management Card (option)

PROTECTION

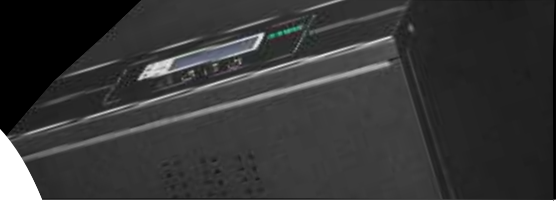
- Overload protection
- Short-circuit protection
- Thermal protection
- Output voltage filtering

SUPPORT

- On-site support
- 2-year guarantee
- Delivery in 14 business days

ADDITIONAL OPTIONS

-Additional year of warranty at 15% of the equipment price



SINLINE PRO 10 000

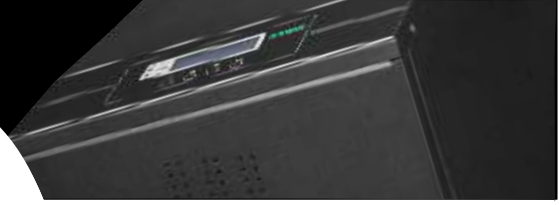
TECHNICAL DATA

PARAMETERS	SINLINE PRO 10 000
Output power [1]	10 kVA 8 kW
GENERAL DATA	
Topology	VI
Total efficiency for Pmax AC/AC	>98 %
Cooling	Forced, internal fans
Protection level	IP20
Work environment	Separate room with low contamination level
Working temperature [2]	10÷40°C
Storage temperature	0÷40°C
Relative humidity when working	< 95 %
Relative humidity during storage	< 95 %
Altitude above sea level [3]	< 1000 m
POWER NETWORK MODE	
Input voltage	~150÷280 V (~165÷280 V)± 2 %
Input voltage frequency	45 ÷ 55 Hz ± 1 Hz
Input voltage range	~172,5÷252 V (~190÷252 V)± 2 %
Switching thresholds: mains-ups	~150 V/~290 V (~165 V/~280 V) ± 2 %
Output voltage waveform	The same as the input
Output voltage filtering	RFI/EMI interference filter, varistor muffler
BATTERY MODE	
Output voltage (RMS)	~230 V ± 2 %
Output voltage waveform	Sine
Output voltage frequency	Synchronous / 50Hz ± 0.2 Hz
Switching thresholds: Ups-mains	~155 V/~285 V (~170 V/~275 V) ± 2 %
Output voltage filtering	LC
Output voltage distortion THDu	< 5 % for Pmax (line)
Crest factor CF	2:1
Short circuit current	>4:I_N

Note: The manufacturer reserves the right to modify the above parameters without prior notice.

Notes:

[1] For standard operation, the load that is applied to the output must not exceed 80% of the value in the table.
The power margin is necessary to ensure the continuous work of the connected devices in the case of instantaneous surges of the load.
[2] Constant exposure of the battery module to temperatures of +25°C reduces the battery life.
[3] The permitted maximum load of the power supply unit decreases with the height above the sea level above the limit specified above.



SINLINE PRO 10 000

TECHNICAL DATA

BATTERIES	
Battery voltage (total)	336 VDC
UPS batteries	**1 x 28 x VRLA 12 V / 7 Ah** *2 x 28 x VRLA 12 V / 7Ah (option)*
Internal battery backup time (100%/80%/50% Pmax)[5]	**>7/10/15 min** *>13/17/30 min*
Backup time with 1 battery pack (100%/80%/50% Pmax)[5]	>40/51/92 min
Maximum charging time for internal batteries [4]	< 2h
Maximum charging time for 1 pack (after recharging with the power of 80% Pmax) [4]	< 3h
MECHANICAL PARAMETERS	
Dimensions (width x depth x height)	340x740x795mm
UPS weight	200 kg
FITTINGS	
Terminals	Screw terminals; max. 16 (wire)
AC Input protection	Overcurrent switches for base and BYPASS lines 2 x 63 A (eh. B)
DC protection (internal batteries)	30A / 400VDC, cylindrical 10x38 gRB
DC protection (external battery pack)	30A / 400VDC, cylindrical 10x38 gRB
Output protection	Electronic
Signals	Sound and LED, LCD display
Communication interface	RS 232, USB, network management card SNMP / HTTP -option
EPO	yes
Service BYPASS switch	yes

Note: The manufacturer reserves the right to modify the above parameters without prior notice.

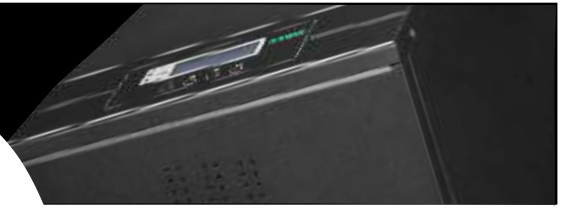
Notes:

[4]Charging time to reach 90% of the battery capacity, prior to discharging with a load equal to 80% Pmax
[5]Example of a battery pack in a typical configuration.

CDS and AVR SYSTEM

Devices from the Sinline Pro 10000 family are fitted with a unique Clear Digital Sinus system (CDS) generating accurate sinusoidal output voltage.
The power supply unit is also fitted with the Automatic Voltage Regulation system (AVR), which enables lightning correction of small network voltage drops and rises.

SINLINE PRO 10 000



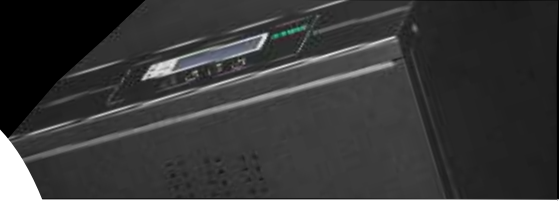
INSTALLATION GUIDELINES

Parameter / UPS			SINLINE PRO 10 000
Apparent/active power			10 kVA 8 kW
Power supply parameters			
Supply system topology			1P3W
Rated voltage			230 V
Rated current			46 A
Rated input frequency			50 Hz
Minimum wire section surface area			10mm^2
Primary and BYPASS line protection	Switch fuse		80 A gG
	Switch fuse		80 A gG
Output parameters			
Output system topology			1P3W
Rated output voltage			230 V
Rated current			44 A
Minimum wire section surface area			10mm^2
Output line protection	Switch disconnector		80 A
Environmental parameters			
Quantity of heat released for nominal work conditions			<600 BTU
Working temperature			10÷40^{0}C
Storage temperature			0÷40^{0}C
Humidity			< 95 %
Altitude (above sea level)			< 1000 m
Mechanical parameters			
Device dimensions (width x depth x height)			340x740x795mm
UPS weight			200 kg
Operating distance			front: >200 mm sides: >100 mm rear: >300 mm

CONNECTING THE UPS

The weight of the device should be considered when selecting the location for the installation. The UPS should only be used in rooms where dust, temperature, and humidity levels are within the device specifications. The appropriate device cooling conditions must be ensured for the UPS to work correctly. For this reason, the ventilation openings of the UPS must be uncovered at all times, and the distance between the UPS and other objects should not be less than 30 cm.

Detailed information is provided in a separate guidelines document that is enclosed with the product.



SINLINE PRO 10 000

PROTECTION

Overload protection

An overload (above 105%) is indicated by a continuous sound and a corresponding message on the display.
If the overload is 105 ÷ 120%, then the power supply unit will remain in the previous mode for one minute before switching to BYPASS. If the overload exceeds 120% of the nominal power rating, the Bypass mode is switched on immediately. The unit remains in BYPASS as long as the overload continues above the predefined limit (CONFIGURATION 3/4; ProgKas.Prz.). Once the overload discontinues, the unit attempts to restart five times. If they fail, the unit switches to EMERGENCY mode. In BACKUP mode, an overload causes the unit to switch to EMERGENCY mode without any additional attempts to restart.

Short circuit protection

In the inverter-based modes, i.e. NORMAL, BACKUP, and HYBRID, there is an electronic short circuit protection that, in case of a short circuit, limits the short circuit current to a safe level. The presence of a short circuit is indicated by the corresponding message and a quick, intermittent sound. If the short circuit lasts longer than 100 ms, the unit is switched to EMERGENCY mode. In work modes where the BYPASS line is used, automatic fuses F3 are used.

Surge protection

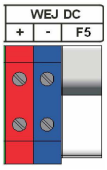
The unit features surge protection at the input, which protects the receiver circuits and internal circuitry against high energy voltage surges that are caused by atmospheric phenomena and interference in the power network.

Battery protection

Batteries are protected with fusible cut-outs. The connection of the external battery pack features an additional safeguard, as do the internal batteries. These safety devices also serve as disconnecting switches that can be used, for example. during assembly. The types of fuses are specified in the technical parameters table.

NOTE! It is forbidden to use fuses other than those listed in the device specification.

The instructions placed in the frame, below the fuses, informing about the need to maintain an appropriate order when switching in fuses, must be followed. Switch on F1 at the beginning, and then wait 10 s and switch F2. Failure to follow these instructions may damage the unit.



The fusible cut-out F5 protects the terminal of the external battery pack and is located to the right of the terminals. When the mounting is open, both poles become disconnected.

Thermal protection

The unit is equipped with a thermal safeguard that protects it against overheating. There are two levels of protection. If the internal temperature approximates a critical value, then a sound is emitted and a message is displayed on the screen. The unit remains in the current mode. If the temperature keeps rising, at the critical value an alert message is displayed and the unit switches to EMERGENCY mode.

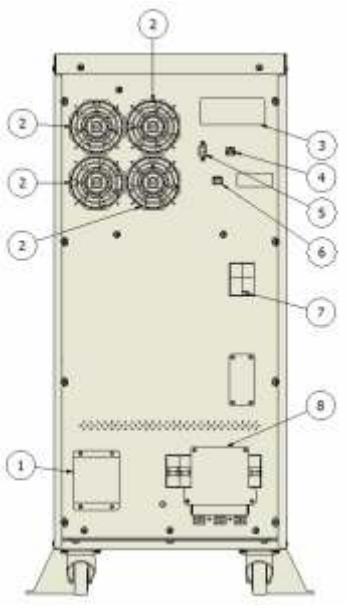
SINLINE PRO 10 000

USER INTERFACE

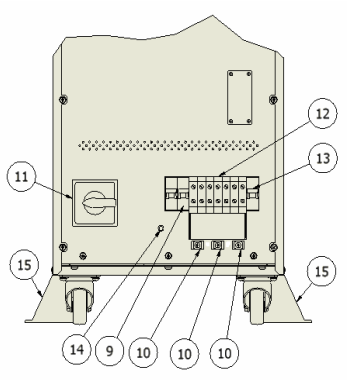
The user interface is a four-button keypad on the upper UPS casing, LCD and three LEDs. It enables the monitoring of operating parameters and their modification.

Graphical symbol	Signal	description
	LED1	LED indicating UPS work mode: REGULAR/BACKUP
AVR	LED2	LED indicating the activation of the AVR System.
	LED3	LED indicating emergency mode

BACK PANEL



1) BYPASS switch cover
2) Fans
3) Adapter card slot plug
4) USB communication interface
5) RS232 communication interface
6) EPO connector
7) Internal battery fuse link
8) Terminal connectors cover



9) AC Input automatic fuses
10) Wire mounting grip
11) BYPASS/UPS service switch
12) Connection panel
13) External battery fusible cut-out
14) Device earthing point
15) Assembly fixtures

SINLINE PRO 10 000

USB AND RS232 COMMUNICATION

SINLINE PRO 10000 series units are equipped with extended management functions. There are two RS232 and USB communication ports and PowerSoft Personal software provided with the UPS. To ensure correct communication, it is necessary to connect the UPS to a free computer port with the provided communication cable. Once connected, the UPS and computer should be switched on and the software should be installed as per the enclosed manual and by following the installation application's instructions (applies to Microsoft Windows).

SNMP/HTTP NETWORK MANAGEMENT CARD

The EVER network management card is optional and can be installed by the user. It is a device that is used to integrate the UPS with an Ethernet-type computer network. The network card is located in the special slot on the back wall of the UPS. The card enables the user to manage the UPS from any computer in the network. This solution is most often used for central power supply, or if there is a need to manage the power supply system remotely. The management card features the following services:
SNMP agent enables power supply management with software called
SNMP manager;
HTTP server enables the display and modification of the UPS parameters by using a web Browser;

NOTE! A connected SNMP card enables UPS communication with RS232, USB, and PowerSoft Personal.

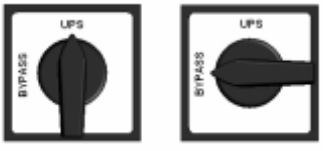
EPO

EPO (Emergency Power Off) is a mechanism that cuts off the energy supply to receivers at the UPS output in extreme situations (e.g. a fire). The unit switches to EMERGENCY mode.
The mechanism can be activated in two ways:
- disconnected pins of the external EPO connector (release device),
- manual command on the interface (CONTROL 1/3; EmergencyShut-down).

The output voltage will be circuited again after the user commands the cancellation of the alert flag (CONTROL 2/3; EraseFailure) and sets the release device to inactive (normal position) - in case of the external initiation of the release. It is possible to temporarily lock the EPO function during the assembly of the EPO release device. Then, the technician can remove the EPO connector without risking a blackout of the receiver devices. It may last up to 1 minute, beginning from the setting of the control flag (CONTROL 2/3, Shut-down time.EPO). After that time, the lock is automatically turned off.

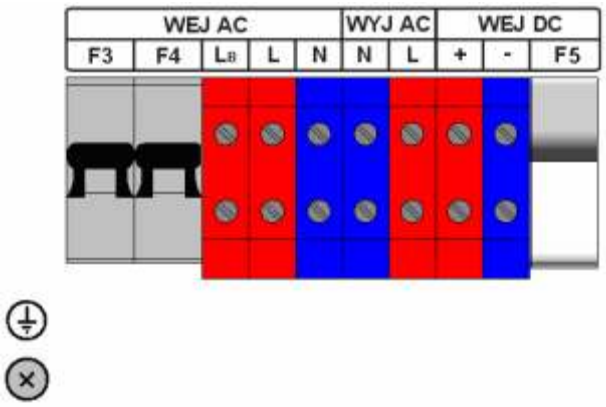
SERVICE BYPASS SWITCH

The unit is equipped with a service BYPASS line switch, which enables the direct switching of the BYPASS line to connect it to the output clips of the unit and bypassing the unit blocks.



SINLINE PRO 10 000

CONNECTION TERMINALS



F3 Service BYPASS line protection
F4 Primary line protection

WEJ AC input terminals
L_B service BYPASS phase line
L primary phase line
N primary neutral line

WYJ AC output terminals
L output phase line
N output neutral line

WEJ DC input terminals for the external battery pack
\+ red pole
\- blue pole

F5 - protection for the external battery pack terminal (fuse- link)
⏚ **-** protective earthing point, connection of a cable with an eyehole connector using an M6 screw
The UPS is not provided with connection wires with sockets. Therefore, the connection takes place by screwing down the ends of the individual conductors to the connector. Then, the conductors need to be protected against being pulled out with clips that are attached to holders below the connection terminals. The wire sizes specified in the wiring guidelines should be used. The conductor ends should be finished with metal sleeves.

NOTE! The UPS should be connected by qualified and authorised personnel only. The UPS Is completely disconnected from the power network only when the power supply cord is disconnected.

It is recommended for the protection systems in the building's electric system to be used as one of the measures of protection. The parameters of the building's electric wiring system protection should be selected in accordance with the type and magnitude of the load connected to the wiring system. In extreme cases, the different protection parameters of the building and power supply unit's systems may cause the former to be activated more rapidly.

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